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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/627,154	07/24/2003	Nicolay Y. Kovarsky	AMAT/7624/CMP/ECP/RKK	2515

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EXAMINER

SMITH, NICHOLAS A

ART UNIT	PAPER NUMBER
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1742

DATE MAILED: 05/01/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/627,154

Applicant(s)

KOVARSKY ET AL.

Examiner

Nicholas A. Smith

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 February 2006.
2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 and 22-33 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-8, 22-33 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Status of Claims

Claims 1-8 remain for examination. Claims 9-21 have been canceled. Claims 22-33 are new.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Izumi et al. (US 2001/0007304) in view of Ehram (US Patent No. 3,909,381).

Izumi et al. in view of Ehram is applied to the claims for the same reasons as stated in p. 3-4 of the office action dated July 22, 2005.

Amendments to claims 1 and 5 are grammatical in nature and thus do not change their scope.

Claims 4 and 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Izumi et al. in view of Ehram as applied to claim 1 on p. 3-4 of the office action dated July 22, 2005, and further in view of Belongia et al. (US Patent No. 6,391,209).

Izumi et al. in view of Ehram and further in view of Belongia et al. is applied to the claims for the same reasons as stated in p. 4-6 of the office action dated July 22, 2005.

Claims 22-25 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Izumi et al. in view of Ehram.

Regarding claim 22, Izumi et al. teaches an electrolysis cell **1** (i.e., a fluid basin) comprising an anode chamber (**7**) and a cathode chamber (**8**). Izumi et al. also teaches a fluid container (**2**) in fluid communication with the cell (**1**). The fluid container comprises a fluid inlet (**12**) and outlet (**23**) and an absorbent material positioned between the inlet and outlet (see Figure 1). The absorbent material is configured to release ozone under certain conditions (paragraphs 75-95). This absorbent material can thus maintain the amount of ozone with a processing window during an electrochemical process.

However, Izumi et al. does not teach a fluid container for supplying solution to the electrolysis cell. Ehram teaches an electroplating cell comprising an anode chamber and a cathode chamber (see Figure 1). Each chamber is supplied by an electrolyte reservoir (**20** or **24**). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Izumi et al. by incorporating an electrolyte reservoir as disclosed by Ehram, in order to supply the cell with fresh electrolyte as taught by Ehram (col. 5, lines 4-25).

Regarding claim 23, Izumi et al. does not teach the use of two or more additives.

Ehram teaches the use of an electrolyte with at least two additives (figure, abstract, col. 1, lines 21-28). It would have been obvious to one of ordinary skill in the art to use at least two additives as taught by Ehram because the secondary additives

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can have beneficial effect in the process, such as acting as a catalyst (col. 1, lines 21-28).

Regarding claim 24, Izumi et al. teaches that the adsorbent material is composed of high-silica (a mineral) materials such as zeolites (paragraph 62).

Regarding claim 25, Izumi teaches that the anode chamber and cathode chamber are separated by an ion-exchange membrane 6 (paragraph 54).

Regarding claim 27, Izumi teaches that the adsorbent material is configured to desorb ozone under certain conditions and absorb ozone under others (see abstract).

Claims 26 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Izumi et al. in view of Ersham as applied to claim 22 and further in view of Belongia et al. (US Patent No. 6,391,209).

Izumi and Ersham teach the features as previously described. However, regarding claim 26, these references do not teach that the fluid outlet of the fluid container (which holds the adsorbent material) should be in fluid communication with the cathode chamber of the electrolysis cell.

Belongia teaches a system for providing a purified electrolyte to electrolysis cell (Figure 4). The system comprises an electrolyte reservoir (1), a plating cell (4), and a recycling system (11) for purifying the electrolyte. The recycling system comprises a device (31) which removes contaminants using absorbent mops and pads (column 8, lines 36-45). Regarding claim 4, the outlet of this device is in fluid communication with the plating cell (see Figure 4).

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It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Izumi in view of Ehram by positioning the adsorbent material such that the fluid outlet of its container would be in fluid communication with the plating cell, as taught by Belongia et al., because Belongia et al. teaches that this allows the electrolyte to be cleaned and recycled (column 1, lines 6-14).

Regarding claim 28, Izumi et al. in view Ehram does not teach a filter positioned between the adsorbent holding container and the fluid basin. However, Belongia et al. teaches (see Figure 4) a filter (42) positioned between the adsorbent container 31 and the fluid basin (electrolysis cell 4). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Izumi et al. in view of Ehram by incorporating a filter between the adsorbent material and the electrolysis cell as disclosed by Belongia et al., in order to remove suspended particles from the electrolyte as taught by Belongia et al. (column 9, lines 14-19).

Claims 29-30 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Izumi et al. (US 2001/0007304) in view of Ehram (US Patent No. 3,909,381).

Since claim 29 is identical to claim 1 except in the aspect of the further requirement of an electrolyte with at least two additives, Izumi et al. in view of Ehram is applied to the claim 29 for the same reasons as stated in p. 3-4 of the office action dated July 22, 2005 in regards to claim 1. In regards to the requirement of an electrolyte with at least two additives, Ehram (figure, abstract, col. 1, lines 21-28) uses an electrolyte with multiple additives as taught above.

Izumi et al. in view of Ehrsam is applied to claims 30 and 32 for the same reasons as stated in p. 3-4 of the office action dated July 22, 2005 in regards to claims 2 and 5.

Claims 31 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Izumi in view of Ehrsam as applied to claim 1 on p. 3-4 of the office action dated July 22, 2005, and further in view of Belongia et al. (US Patent No. 6,391,209).

Izumi et al. in view of Ehrsam and further in view of Belongia et al. is applied to the claims 31 and 33 for the same reasons as stated in p. 4-6 of the office action dated July 22, 2005 in regards to claims 4 and 8.

Response to Arguments

Applicant argues:

1. Izumi et al. teaches away from a system to provide a continuous, ongoing concentration of a component within a processing window.
2. Ersham does not provide motivation to rejuvenate electrolyte solution nor the apparatus to perform rejuvenation.
3. Belongia et al. teaches away from interchanging the filter with a material to leach a component into its plating bath solution.

Examiner responds:

1. Izumi et al. teaches maintaining the concentration of ozone, as ozone can be added to or removed from the process solution (abstract).
2. Ersham does mention adding fresh organic electrolyte solution (col. 5, lines 12-17) to rejuvenate the system. Ersham discusses the need to have at least a

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certain concentration of organic compounds in his process (col. 3, lines 27-37) and that these organic compounds need rejuvenation (col. 5, lines 12-17). Thus, there is motivation present.

3. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., a filter interchangeably designed to leach a component into its plating bath solution) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). In the instant application, the filter in claims 8, 28 and 33 is designed to remove particulates from the plating bath solution, not leach a component into its plating bath solution as asserted by applicants in the remarks.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any


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extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nicholas A. Smith whose telephone number is (571)-272-8760. The examiner can normally be reached on 8:30 AM to 5:00 PM, Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571)-272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700